

EXPECTED OPERATIONS AND STATUS OF THE TRUST FUND DURING
THE PERIOD OCTOBER 1, 1977, TO DECEMBER 31, 1980

The expected operations of the trust fund during fiscal years 1978-80 (on the new October through September basis) are shown in table 5, together with the past experience of the program. The projection shown in table 5—and the entirety of this section—is based on the intermediate set of projection assumptions labeled alternative II, which is presented in detail in appendix A.

The estimates of income from hospital insurance contributions are at a considerably higher level during the period projected than during the past. This occurs primarily as a result of the increase in the hospital insurance tax rate which took place on January 1, 1978, the further increase scheduled in the law to be effective on January 1, 1979, and the higher earnings bases scheduled in the law.

Income received through the financial interchange between the railroad retirement account and the trust fund under the provisions of the Railroad Retirement Act is estimated on the same basis as income from hospital insurance contributions. Estimates of the corresponding outgo are included in the disbursement items.

Estimated income to the trust fund which is appropriated from general revenues to reimburse the program for the cost of coverage of noninsured persons is the same as the estimates of disbursements for such persons, net of corrections for differences between costs and amounts transferred for previous years. Premium income and disbursements for other noninsured persons over age 65 who may enroll in the hospital insurance program on a voluntary basis are based on an estimated enrollment of 21,000 in fiscal year 1978.

Reimbursement from general revenues for military wage credits is projected at \$141 million in each year. This is based on the determination made by the Secretary of Health, Education, and Welfare in 1975 of the level annual appropriations necessary to amortize the additional costs arising from these wage credits. Reimbursement from general revenues for costs arising from the granting of noncontributory wage credits to persons of Japanese ancestry who were interned during World War II is \$2 million in fiscal year 1978, based on a determination made by the Secretary of Health, Education, and Welfare in 1976.

Estimated reimbursement from general revenues for the cost, paid initially from the hospital insurance trust fund, of Professional Standard Review Organization (PSRO) review of hospital admissions under Federal programs other than the hospital insurance program is based on estimates of the payments for such reviews, net of corrections for differences between payments and amounts transferred in previous years.

The investment of new assets received during fiscal years 1978-80 is assumed to be in the form of special public-debt obligations bearing interest rates of 7% percent, payable semiannually. The average effective annual rate of interest on the assets held by the hospital insurance trust fund on September 30, 1977, was 7.4 percent.

Disbursements for benefits are projected to increase sharply in fiscal years 1978-80, primarily as a result of the high rate of increase in hospital costs reimbursable under the program. The expenditures for benefit payments shown in table 5 differ slightly from those shown in the 1979 Federal budget. These estimates are based on a more recent

demographic projection, and they do not reflect the implementation of certain proposed changes in regulations which were included in the budget.

The actual operation of the hospital insurance program is organized, in general, on a calendar year basis. Earnings subject to taxation and the applicable tax rates are established by calendar year, as are the inpatient deductible and other cost sharing amounts. The projected operations of the trust fund on a calendar year basis are shown in table 6, according to the same basis as used in table 5. The following discussion of the financing of the program is on a calendar year basis.

The ratios of assets in the trust fund at the beginning of each calendar year to total disbursements during that year are shown in table 7 for past years and as projected through 1980. The ratio of assets to disbursements grew gradually until it reached approximately the level of one-half of a year's expenditures as of the beginning of 1971. After dropping slightly during both of the following 2 years, it increased to 69 percent in 1974 and 79 percent in 1975. The ratio decreased slightly in 1976 to 77 percent and decreased sharply in 1977 to 66 percent. It is projected to decline rather sharply during the next 3 years to 48 percent at the beginning of 1980.

TABLE 5.—OPERATIONS OF THE HOSPITAL INSURANCE TRUST FUND DURING FISCAL YEARS 1967-80

[In millions]

| Fiscal year ¹ | Income | | | | | | | Disbursements | | | Trust fund | | |
|--------------------------|---------------|--|-------------------------------------|-----------------------------------|---|-------------------------------|-------------------------|---------------|------------------|--------------------------------------|---------------------|----------------------|---------------------|
| | Payroll taxes | Transfers from railroad retirement account | Reimbursement for uninsured persons | Premiums from voluntary enrollees | Reimbursement for military wage credits | Reimbursement for PSRO review | Interest on investments | Total income | Benefit payments | Administrative expenses ² | Total disbursements | Net increase in fund | Fund at end of year |
| Historical data: | | | | | | | | | | | | | |
| 1967----- | \$2,689 | \$16 | \$327 | | \$11 | | \$46 | \$3,089 | \$2,508 | \$89 | \$2,597 | \$492 | \$1,343 |
| 1968----- | 3,514 | 44 | 273 | | 11 | | 61 | 3,902 | 3,736 | 79 | 3,815 | 88 | 1,431 |
| 1969----- | 4,423 | 54 | 749 | | 22 | | 96 | 5,344 | 4,654 | 104 | 4,758 | 586 | 2,017 |
| 1970----- | 4,785 | 64 | 617 | | 11 | | 137 | 5,614 | 4,804 | 149 | 4,953 | 661 | 2,677 |
| 1971----- | 4,898 | 66 | 863 | | 11 | | 180 | 6,018 | 5,442 | 150 | 5,592 | 426 | 3,103 |
| 1972----- | 5,226 | 66 | 503 | | 48 | | 188 | 6,031 | 6,108 | 167 | 6,276 | -245 | 2,859 |
| 1973----- | 7,663 | 63 | 381 | | 48 | | 196 | 8,352 | 6,648 | 194 | 6,842 | 1,510 | 4,369 |
| 1974----- | 10,602 | 99 | 451 | \$4 | 48 | | 405 | 11,610 | 7,806 | 259 | 8,065 | 3,545 | 7,914 |
| 1975----- | 11,291 | 132 | 481 | 6 | 48 | | 609 | 12,568 | 10,353 | 259 | 10,612 | 1,956 | 9,870 |
| 1976----- | 12,031 | 138 | 610 | 8 | 48 | | 709 | 13,544 | 12,267 | 312 | 12,579 | 966 | 10,836 |
| T.Q.----- | 3,366 | 143 | *0 | 2 | 0 | | 5 | 3,516 | 3,315 | 89 | 3,404 | 112 | 10,948 |
| 1977----- | 13,649 | 40 | *803 | 11 | 141 | | 770 | 15,374 | 14,906 | 301 | 15,207 | 167 | 11,115 |
| Projection: | | | | | | | | | | | | | |
| 1978----- | 16,701 | 4203 | 688 | 13 | *143 | 30 | 797 | 18,575 | 17,543 | 383 | 17,926 | 649 | 11,764 |
| 1979----- | 19,951 | 193 | 734 | 16 | 141 | 36 | 845 | 21,916 | 20,658 | 409 | 21,067 | 849 | 12,613 |
| 1980----- | 23,105 | 224 | 671 | 20 | 141 | 60 | 896 | 25,117 | 24,198 | 459 | 24,657 | 460 | 13,073 |

¹ For 1967 through 1976, fiscal years cover the interval from July 1 through June 30; the 3-mo interval from July 1 through Sept. 30, 1976, is labeled "T.Q.," the transition quarter; fiscal years 1977-80 cover the interval from Oct. 1 through Sept. 30.

² Includes costs of experiments and demonstration projects.

³ The 1977 transfer is for benefits and administrative expenses during the 5-quarter period covering the transition quarter and fiscal year 1977.

⁴ The 1978 transfer is for contributions during the 5-quarter period covering the transition quarter and fiscal year 1977.

⁵ Includes \$2,600,000 in reimbursement from general revenues for costs arising from the granting of noncontributory wage credits to persons of Japanese ancestry who were interned during World War II.

TABLE 6.—OPERATIONS OF THE HOSPITAL INSURANCE TRUST FUND DURING CALENDAR YEARS 1966-80

[In millions]

| Calendar year ¹ | Income | | | | | | Disbursements | | | Trust fund | | | |
|----------------------------|---------------|--|-------------------------------------|-----------------------------------|---|-------------------------------|-------------------------|--------------|------------------|--------------------------------------|---------------------|----------------------|---------------------|
| | Payroll taxes | Transfers from railroad retirement account | Reimbursement for uninsured persons | Premiums from voluntary enrollees | Reimbursement for military wage credits | Reimbursement for PSRO review | Interest on investments | Total income | Benefit payments | Administrative expenses ¹ | Total disbursements | Net increase in fund | Fund at end of year |
| Historical data: | | | | | | | | | | | | | |
| 1966..... | \$1,858 | \$16 | \$26 | | \$11 | | \$32 | \$1,943 | \$891 | \$108 | \$999 | \$944 | \$944 |
| 1967..... | 3,152 | 44 | 301 | | 11 | | 51 | 3,559 | 3,353 | 77 | 3,430 | 129 | 1,073 |
| 1968..... | 4,116 | 54 | 1,022 | | 22 | | 74 | 5,287 | 4,179 | 99 | 4,277 | 1,010 | 2,083 |
| 1969..... | 4,473 | 64 | 617 | | 11 | | 113 | 5,279 | 4,739 | 118 | 4,857 | 422 | 2,505 |
| 1970..... | 4,881 | 66 | 863 | | 11 | | 158 | 5,979 | 5,124 | 157 | 5,281 | 698 | 3,202 |
| 1971..... | 4,921 | 66 | 503 | | 48 | | 193 | 5,732 | 5,751 | 150 | 5,900 | -168 | 3,034 |
| 1972..... | 5,731 | 63 | 381 | | 48 | | 180 | 6,403 | 6,318 | 185 | 6,503 | -99 | 2,935 |
| 1973..... | 9,944 | 99 | 451 | \$2 | 48 | | 278 | 10,821 | 7,057 | 232 | 7,289 | 3,532 | 6,467 |
| 1974..... | 10,844 | 132 | 471 | 5 | 48 | | 523 | 12,024 | 9,099 | 272 | 9,372 | 2,652 | 9,119 |
| 1975..... | 11,502 | 138 | 621 | 7 | 48 | | 664 | 12,980 | 11,315 | 266 | 11,581 | 1,399 | 10,517 |
| 1976..... | 12,727 | 143 | ² 0 | 9 | 141 | | 746 | 13,766 | 13,340 | 339 | 13,679 | 88 | 10,605 |
| 1977..... | 14,114 | ³ 0 | ² 803 | 12 | 143 | | 784 | 15,856 | 15,737 | 283 | 16,019 | -163 | 10,442 |
| Projection: | | | | | | | | | | | | | |
| 1978..... | 17,293 | ⁴ 203 | 688 | 14 | 141 | 30 | 853 | 19,222 | 18,161 | 390 | 18,551 | 671 | 11,113 |
| 1979..... | 21,043 | 193 | 734 | 17 | 141 | 36 | 924 | 23,088 | 21,490 | 428 | 21,918 | 1,170 | 12,283 |
| 1980..... | 23,743 | 224 | 671 | 22 | 141 | 60 | 987 | 25,848 | 25,115 | 469 | 25,584 | 264 | 12,547 |

¹ Includes costs of experiments and demonstration projects.² No transfer is made in 1976 because of the change in transfer dates from December to March. The 1977 transfer is for benefits and administrative expenses during the 15-mo period beginning July 1976 and ending September 1977.³ No transfer is made in 1977 because of the change in transfer dates from August to June. The 1978 transfer is for contributions during the 5-quarter period covering the transition quarter and fiscal year 1977.⁴ Includes \$2,000,000 in reimbursement from general revenues for costs arising from the granting of noncontributory wage credits to persons of Japanese ancestry who were interned during World War II.

TABLE 7.—*Ratio of assets in the fund at the beginning of the year to disbursements during the year for the Hospital Insurance Trust Fund*

| <i>Calendar year</i> | Percent |
|----------------------|---------|
| Historical data: | |
| 1967----- | 28 |
| 1968----- | 25 |
| 1969----- | 43 |
| 1970----- | 47 |
| 1971----- | 54 |
| 1972----- | 47 |
| 1973----- | 40 |
| 1974----- | 69 |
| 1975----- | 79 |
| 1976----- | 77 |
| 1977----- | 66 |
| Projection: | |
| 1978----- | 56 |
| 1979----- | 51 |
| 1980----- | 48 |

ACTUARIAL STATUS OF THE TRUST FUND

The 1971 Advisory Council recommended that the hospital insurance program be operated on the general financing principle that annual income to the program should be approximately equal to annual outlays of the program plus an amount to maintain a balance in the trust fund equal to 1 year's expenditures. This principle reflects the view that a sizable fund is needed for the contingency that future income and outgo may differ substantially from projected levels, but that it is unnecessary and impractical to fund fully the future benefits of workers as they accrue the right to those future benefits.

The projected expenditures under the program, expressed as percentages of taxable payroll, are summarized for selected years over the next 25-year period in table 8. The ratio of expenditures to taxable payroll has increased from 0.95 percent in 1967 to an estimated 1.93 percent in 1977, reflecting both the higher rate of increase in hospital costs than in earnings subject to hospital insurance taxes and the extension of hospital insurance benefits to disabled beneficiaries and persons suffering from end stage renal disease. Further increases in this ratio to 2.18 percent in 1980, 2.86 percent in 1985, and 5.20 percent by the year 2000 result from the assumption that the cost of institutional health care will continue to increase at a higher rate than taxable earnings (see appendix A for a description of the methodology and assumptions used in this projection).

The allowances necessary to build the trust fund to the level of a year's disbursements and to maintain it at that level, after accounting for the offsetting effect of interest earnings, are shown also in table 8. Since the level of the trust fund at the beginning of calendar year 1978 is 56 percent of the projected disbursements during 1978, a cost is associated with increasing it to the 100 percent level. Building the trust fund to the level of a year's disbursements could be accomplished in a single year, in a period of several years, or over the entire 25-year projection period. Because of the many patterns of trust fund growth possible, the allowance for trust fund building and maintenance has, for purposes of display in table 8, been developed to provide for uniform growth of the trust fund from the level of 56 percent at the beginning of 1978 to the level of 100 percent at the end of the 25-year projection period.

The adequacy of the financing of the hospital insurance program under current law is measured by comparing on a year-to-year basis the actual tax rates specified by law with the corresponding total costs of the program, expressed as percentages of taxable payroll. If these two items are exactly equal in each year of the 25-year projection period and all projection assumptions are realized, tax revenues along with interest income will be sufficient to provide for benefits and administrative expenses for insured persons and to build the trust fund gradually to the level of a year's outgo by the end of the period. In practice, however, tax rate schedules generally are designed with rate changes occurring only at intervals of several years, rather than with continual year-by-year increases to match exactly with projected cost increases.

To the extent that small differences between the yearly costs of the program and the corresponding tax rates occur for short periods of time and are offset by subsequent differences in the reverse direction, the substance of the financing objectives will have been met.

The projected total costs of the program, expressed as percentages of taxable payroll, and the tax rates scheduled under current law are shown in table 8 for selected years over the 25-year period 1978-2002. The total cost of the program, including expenditures plus trust fund building and maintenance, exceeds the tax rate in nearly every year of the projection. Furthermore, expenditures for benefits and administrative expenses alone exceed the corresponding tax rates for all future years beginning in the mid-1980's. The trust fund as a percent of a year's disbursements is projected to drop to a level of 42 percent by the beginning of 1981 and then to return to a level of about 57 percent in 1983 and 1984. The trust fund is projected to decline rapidly thereafter until it is completely exhausted in about 1990.

The actuarial balance of the hospital insurance program is defined to be the excess of the average tax rate for the 25-year valuation period over the average cost of the program, expressed as a percent of taxable payroll, for the same period. The average tax rate for the 25-year period 1978-2002 is 2.74 percent; the average cost of the program is 3.86 percent of taxable payroll, composed of 3.67 percent for program expenditures and 0.19 percent for the building and maintenance of the trust fund. The resulting actuarial balance, as shown in table 9, is a deficit of 1.12 percent of taxable payroll.

Long-range cost estimates for the hospital insurance program have been made, since the beginning of the program, for the 25-year period beginning with the year of the report. A relatively long valuation period, such as 25 years, is necessary in order to depict the pattern of rising costs which will ensue if trends over the past two decades continue into the future. Even a valuation period as long as 25 years fails to present fully the future contingencies that reasonably may be expected, such as the impact of the demographic shift after the turn of the century which is discussed in the old-age, survivors, and disability insurance report. On the other hand, the degree of uncertainty concerning future hospital costs, relative to the remainder of the economy, is sufficiently great as to limit the usefulness of projections beyond 25 years. A precise prediction of the future is not possible, even in the short range; however, both short- and long-range estimates can be made, based on reasonable assumptions, which will indicate the trend and general range of future costs.

Since future economic, demographic, and health care usage and cost experience may differ considerably from any single set of assumptions on which cost estimates are based projections also have been prepared on the basis of two alternative sets of assumptions. The estimated operations of the hospital insurance trust fund during calendar years 1977-85 are summarized in table 10 for all three alternatives, and table 11 compares the actuarial balance under each of the three. The assumptions underlying alternative II, the intermediate projection, are presented in substantial detail in appendix A. The assumptions used in preparing alternative projections I and III also are summarized in appendix A. The projections shown in the statement of expected operations and status of the trust fund through December 31, 1980, contained earlier in this report, are based on the assumptions contained in alternative II.

The three alternative sets of assumptions were selected in order to indicate the general range in which the cost of the program reasonably might be expected to fall. The alternative I assumptions are somewhat more optimistic than those of alternative II, resulting in a lower average cost over the 25-year period and a stronger trust fund development. Alternatives I and III provide for a fairly wide range of possible experience. Actual experience reasonably may be expected to fall within the range, but no guarantee can be made that this will be the case, particularly in light of the wide variations in experience that have occurred since the beginning of the program. The projected trust fund development under alternative III also provides a measure of the strength of the financing of the program. An adequate financing schedule ought to be sufficiently strong to withstand, for a period of several consecutive years, conditions in the general economy and in the hospital sector which are substantially more adverse than anticipated under alternative II.

Under alternative II, the trust fund as a percent of a year's disbursements is projected to remain relatively level into the early 1980's and to decline rapidly thereafter until it is completely exhausted in about 1990.

Under alternative I, the trust fund is projected to grow moderately in the 1980's, then to decline gradually until the fund is completely exhausted in the early years of the next century. Under alternative III, the trust fund as a percent of a year's disbursements is projected to decrease steadily, with complete exhaustion of the fund by the late 1980's.

The divergence in outcomes among the three alternatives is reflected both in the estimated operations of the trust fund and in the 25-year average costs. The variations in the underlying assumptions, as shown in appendix A, can be characterized as (1) moderate in terms of magnitude of the differences on a year-by-year basis and (2) persistent over the duration of the 25-year period. Under alternative II, program costs are projected to grow at a rate which gradually declines to an ultimate level of 3 percent more rapidly than taxable payroll. Under alternative I, program costs are projected to grow at a somewhat lower rate which gradually declines to an ultimate difference of 1 percent. Similarly, alternative III follows a pattern whereby program costs initially increase at a somewhat higher rate than under alternative II, gradually declining to an ultimate difference of about 5 percent. Recent experience has indicated that economic conditions producing results

as adverse as those under alternative III can occur. In view of this and because of the wide range of possible experience, it is important that a substantial balance be maintained in the hospital insurance trust fund as a reserve for contingencies.

TABLE 8.—COST AND TAX RATES OF THE HOSPITAL INSURANCE PROGRAM, EXPRESSED AS A PERCENT OF TAXABLE PAYROLL

[In percent]

| Calendar year | Expenditures under the program ¹ | Trust fund building and maintenance ² | Total cost of the program | Tax rate scheduled in the law ³ | Difference |
|----------------------------|---|--|---------------------------|--|------------|
| Historical data: | | | | | |
| 1967..... | 0.95 | | | | |
| 1968..... | 1.05 | | | | |
| 1969..... | 1.13 | | | | |
| 1970..... | 1.21 | | | | |
| 1971..... | 1.33 | | | | |
| 1972..... | 1.31 | | | | |
| 1973..... | 1.34 | | | | |
| 1974..... | 1.42 | | | | |
| 1975..... | 1.69 | | | | |
| 1976..... | 1.84 | | | | |
| 1977..... | 1.93 | | | | |
| Projection: | | | | | |
| 1978..... | 2.06 | 0.15 | 2.21 | 2.00 | -0.21 |
| 1979..... | 2.09 | 0.15 | 2.24 | 2.10 | -0.14 |
| 1980..... | 2.18 | 0.15 | 2.33 | 2.10 | -0.23 |
| 1981..... | 2.28 | 0.15 | 2.43 | 2.60 | +0.17 |
| 1982..... | 2.40 | 0.15 | 2.55 | 2.60 | +0.05 |
| 1983..... | 2.54 | 0.15 | 2.69 | 2.60 | -0.09 |
| 1984..... | 2.71 | 0.16 | 2.87 | 2.60 | -0.27 |
| 1985..... | 2.86 | 0.16 | 3.02 | 2.70 | -0.32 |
| 1990..... | 3.65 | 0.18 | 3.83 | 2.90 | -0.93 |
| 1995..... | 4.47 | 0.21 | 4.68 | 2.90 | -1.78 |
| 2000..... | 5.20 | 0.23 | 5.43 | 2.90 | -2.53 |
| Average ⁴ | 3.67 | 0.19 | 3.86 | 2.74 | -1.12 |

¹ Costs attributable to insured beneficiaries only. Benefits and administrative costs for noninsured persons are financed through general revenue transfers and premium payments rather than through payroll taxes.

² Allowance for building the trust fund balance to the level of a year's outgo and maintaining it at that level, after accounting for the offsetting effect of interest earnings.

³ Rates for employees and employers combined.

⁴ Average for the 25-yr period 1978-2002.

Note: Taxable payroll is adjusted to take into account the lower contribution rates on self-employment income, on tips, and on multiple-employer "excess wages" as compared with the combined employer-employee rate.

TABLE 9.—Actuarial balance of the hospital insurance program, expressed as a percent of taxable payroll

| | Percent |
|--|---------|
| Average contribution rate, scheduled under present law ¹ | 2.74 |
| Average cost of the program: ¹ | |
| Expenditures, for benefit payments and administrative costs for insured beneficiaries..... | 3.67 |
| Building and maintaining the trust fund, at the level of one year's expenditures..... | 0.19 |
| Total cost of the program..... | 3.86 |
| Actuarial balance..... | -1.12 |

¹ Average for the 25-year period 1978-2002.

NOTE.—Taxable payroll is adjusted to take into account the lower contribution rates on self-employment income, on tips, and on multiple-employer "excess wages" as compared with the combined employer-employee rate.

TABLE 10.—ESTIMATED OPERATIONS OF THE HOSPITAL INSURANCE TRUST FUND DURING CALENDAR YEARS 1977-85, UNDER ALTERNATIVE SETS OF ASSUMPTIONS

[Dollar amounts in billions]

| Calendar year | Total income | Total disbursements | Net increase in fund | Fund at end of year | Ratio of assets to disbursements(percent) |
|-------------------------|--------------|---------------------|----------------------|---------------------|---|
| Alternative I: | | | | | |
| 1977 ² | \$15.9 | \$16.0 | -\$0.2 | \$10.4 | 66 |
| 1978 | 19.2 | 18.6 | .7 | 11.1 | 56 |
| 1979 | 23.2 | 21.8 | 1.3 | 12.4 | 51 |
| 1980 | 26.0 | 25.3 | .7 | 13.2 | 49 |
| 1981 | 35.1 | 29.1 | 6.0 | 19.2 | 45 |
| 1982 | 39.4 | 33.2 | 6.2 | 25.4 | 58 |
| 1983 | 43.2 | 37.5 | 5.7 | 31.1 | 68 |
| 1984 | 46.5 | 42.0 | 4.5 | 35.5 | 74 |
| 1985 | 51.3 | 46.7 | 4.6 | 40.1 | 76 |
| Alternative II: | | | | | |
| 1977 ² | 15.9 | 16.0 | -.2 | 10.4 | 66 |
| 1978 | 19.2 | 18.6 | .7 | 11.1 | 56 |
| 1979 | 23.1 | 21.9 | 1.2 | 12.3 | 51 |
| 1980 | 25.8 | 25.6 | .3 | 12.5 | 48 |
| 1981 | 34.6 | 29.6 | 5.1 | 17.6 | 42 |
| 1982 | 38.7 | 34.1 | 4.6 | 22.2 | 52 |
| 1983 | 42.3 | 39.1 | 3.2 | 25.4 | 57 |
| 1984 | 45.3 | 44.5 | .8 | 26.3 | 57 |
| 1985 | 49.9 | 50.4 | -.4 | 25.8 | 52 |
| Alternative III: | | | | | |
| 1977 ² | 15.9 | 16.0 | -.2 | 10.4 | 66 |
| 1978 | 19.2 | 18.6 | .7 | 11.1 | 56 |
| 1979 | 23.1 | 22.0 | 1.1 | 12.2 | 50 |
| 1980 | 25.4 | 25.8 | -.5 | 11.7 | 47 |
| 1981 | 33.8 | 30.2 | 3.5 | 15.2 | 39 |
| 1982 | 37.7 | 35.3 | 2.4 | 17.7 | 43 |
| 1983 | 41.4 | 41.0 | .4 | 18.1 | 43 |
| 1984 | 45.0 | 47.3 | -2.3 | 15.8 | 38 |
| 1985 | 50.1 | 54.4 | -4.3 | 11.5 | 29 |

¹ Ratio of assets in the trust fund at the beginning of the year to disbursements during the year.

² Figures for 1977 represent actual experience.

Note: Totals do not necessarily equal the sum of rounded components.

TABLE 11.—ACTUARIAL BALANCE OF THE HOSPITAL INSURANCE PROGRAM, UNDER ALTERNATIVE SETS OF ASSUMPTIONS

[In percent]

| | Alternative | | |
|--|-------------|-------|-------|
| | I | II | III |
| Average contribution rate, scheduled under present law ¹ | 2.74 | 2.74 | 2.74 |
| Average cost of the program, for expenditures and for trust fund building and maintenance ² | 3.13 | 3.86 | 4.71 |
| Actuarial balance | - .39 | -1.12 | -1.97 |

¹ Average for the 25-yr period 1978-2002.

² Average for the 25-yr period 1978-2002, expressed as a percent of taxable payroll.

Note: Taxable payroll is adjusted to take into account the lower contribution rates on self-employment income, on tips, and on multiple-employer "excess wages" as compared with the combined employer-employee rate.

CONCLUSION

The present financing schedule for the hospital insurance program is not adequate to provide for the expenditures anticipated over the entire 25-year valuation period if the assumptions underlying the estimates are realized. Tax rates currently specified in the law (including the scheduled increases in 1979 and 1981) are sufficient, along with interest earnings, to support program expenditures over the next 7 years. However, they are not sufficient, under current assumptions, to provide for adequate growth in the trust fund—relative to annual disbursements—toward the level of a full year's disbursements recom-

mended by the 1971 Advisory Council. The financing for the remainder of the 25-year valuation period is not sufficient even to provide for projected benefits and administrative expenses. The average percent of payroll necessary to provide for benefits and administrative expenses plus growth in the trust fund to the level of 1 year's disbursements exceeds the average tax rate scheduled in the law, producing an average deficit of 1.12 percent of taxable payroll over the entire 25-year projection period. Even under the more optimistic alternative I assumptions, the present financing schedule is not sufficient to support the system.

The trust fund balance at the beginning of 1978 was 56 percent of the projected disbursements for 1978, well below the level of a full year's disbursements. The ratio of fund to disbursements is projected to drop to a level of 42 percent by the beginning of 1981 and then to return to a level of about 57 percent in 1983 and 1984. The trust fund is projected to decline rapidly thereafter, until it is completely exhausted in about 1990. Under the less optimistic alternative III assumptions, the decline of the trust fund is accelerated, with complete exhaustion of the fund by the late 1980's.

The hospital insurance trust fund is not in imminent danger of being unable to provide benefits which become payable. However, the present financing schedule does not provide for adequate growth in the trust fund (relative to annual disbursements); and, after the mid-1980's, disbursements exceed income, leading to complete exhaustion of the fund by about 1990. The Board recommends that action be taken to strengthen the long-range financing of the hospital insurance system. The Board also recommends that a realistic, long-term approach be developed and action be taken to curtail the rapid growth in the cost of the hospital insurance program which has occurred during recent years and which is anticipated in the future.

APPENDIX A.—ACTUARIAL METHODOLOGY AND PRINCIPAL ASSUMPTIONS FOR THE HOSPITAL INSURANCE COST ESTIMATES ¹

The basic methodology and assumptions used in the estimates for the hospital insurance program are described in this appendix. In addition, sensitivity testing of program costs under alternative sets of assumptions is presented.

1. PROGRAM COSTS

The principal steps involved in projecting the future costs of the hospital insurance program are (1) establishing the present cost of services provided to beneficiaries, by type of service, to serve as a projection base; (2) projecting increases in the cost of inpatient hospital services covered under the program; (3) projecting increases in the cost of skilled nursing facility and home health agency services covered under the program; and (4) projecting increases in administrative costs. The major emphasis will be directed toward the cost of inpatient hospital services, which accounts for approximately 95 percent of benefit expenditures.

a. Projection base

The hospital insurance program is obligated, by law, to reimburse institutional providers for the reasonable cost of providing covered services to beneficiaries. In order to establish a suitable base from which to project the future costs of the program, the incurred reasonable cost of services provided must be reconstructed for the most recent period for which a reliable determination can be made. To do this, payments to providers must be attributed to dates of service, rather than to payment dates. In addition, the nonrecurring effects of any changes in regulations or administration of the program and of any items affecting only the timing and flow of payments to providers must be eliminated. As a result, the rates of increase in the incurred cost of the program differ from the increases in cash disbursements shown in tables 5 and 6.

The reasonable costs of covered services to beneficiaries are determined on the basis of provider cost reports. Payments to a provider initially are made on an "interim" basis; to adjust interim payments to the level of retroactively determined costs, a series of payments or recoveries is effected through the course of cost settlement with the provider. The net amounts paid to date to providers in the form of cost settlements are known; however, the incomplete data available do not permit a precise determination of the exact amounts incurred during specific periods of time. Due to the time required to obtain cost reports from providers, to verify these reports, and to perform audits

¹ Prepared by the Office of the Actuary, Social Security Administration.

(where appropriate), final settlements have lagged behind the liability for such payments or recoveries by as much as several years for some providers. Hence, the final cost of the program has not been completely determined for the most recent years of the program, and some degree of uncertainty remains even for earlier years.

Additional problems are posed by changes in administrative or reimbursement policy which have a substantial effect on either the amount or incidence of payment. The extent and timing of the incorporation of such changes into interim payment rates and cost settlement amounts cannot be determined precisely.

The process of allocating the various types of payments made under the program to the proper incurred period—using incomplete data and estimates of the impact of administrative actions—presents difficult problems, the solution to which can be only approximate. Under the circumstances, the best that can be expected is that the actual incurred cost of the program for a recent period can be estimated within a few percent. This increases the error of projection directly, by incorporating any error in estimating the base year into all future years.

b. Hospital costs

The hospital insurance program reimburses participating hospitals for the reasonable cost of providing covered services to beneficiaries. Because of its cost reimbursement nature, the program essentially pays for the share of aggregate inpatient hospital costs which is allocated to beneficiaries. Hence, for analysis and projection purposes, trends in program costs can be separated conceptually into (1) increases in aggregate expenditures by hospitals for all patients in producing services of the types covered by the program and (2) changes in the share of these expenditures that are for hospital insurance beneficiaries and hence will be paid by the hospital insurance program.

Increases in aggregate inpatient hospital costs can be analyzed into three broad categories:

(1) Economic factors—the increase in unit costs that would result if hospitals' input cost increases (wage increases for hospital employees and price increases for goods and services purchased by hospitals) were the same as those for the general economy;

(2) Volume of services—the increase in total output of units of service (as measured by hospital admissions); and

(3) Unit input intensity—the increase in total costs due to increased labor and nonlabor input intensity (wage and price increases for hospital inputs which are more rapid than for workers and products in the general economy, plus increases in the number of hospital employees and amount of supplies and equipment used to produce a unit of service).

It has been possible to isolate some of these elements and to identify their roles in previous hospital cost increases. Table A1 shows the values of the principal components of the increases for historical periods for which data are available and the projected trends used in the estimates.

Increases in economic factors can be divided into those for payroll and those for nonpayroll expenditures. Slightly more than half of hospital costs are for direct payroll expenses. This proportion has declined over the years, and a modest continuation in the decline is projected. The weighted averages of the economic factors in table A1

reflect these year-by-year proportions. Increases in average wages in the period 1966-76 generally ranged from 5½ to 7 percent per year, with the exception of a somewhat higher increase in 1976. Changes in the CPI during the same period generally varied between 3 and 6 percent, with the exception of substantially higher rates of increase in 1974 and 1975. The increases in both average wages and CPI beyond 1976 are based on assumptions used in projecting experience under the OASDI program.

Increases in volume of services (as measured by admissions) are separated into (1) a part due to population growth and (2) a part due to changes in the average number of admissions per capita. The population projection used in this report is based on assumptions used in projecting experience under the OASDI program. Admission incidence rates increased on average 1.7 percent during the 10-year pre-Medicare period 1956-65; the trend since then has been relatively consistent, with the rate of increase for recent years averaging between 1 and 2 percent per year. A continuation of this basic trend is projected for the next 5 years, with a gradual tapering to an ultimate rate of increase that results solely from aging in the general population (i.e., admissions per capita by age and sex ultimately are assumed to be constant, so that the increases in overall average admissions per capita are due solely to changes in the mix of age and sex).

Unit input intensity changes can be analyzed and projected in terms of payroll and nonpayroll components in a manner similar to that for economic factors. The payroll component can be divided further between unit input intensity increases related to (1) the excess of average wage increases for hospital employees over average wage increases in the general economy and (2) increases in the average number of hospital employees per admission.

For several years preceding the beginning of the hospital insurance program, average hospital wages and salaries (as derived from data reported by the American Hospital Association) increased at a rate of about 1 percent per year more rapidly than the rate of increase in earnings in OASDI-covered employment. During the 1967-76 period, this differential has, with the exception of the period 1972-74 when hospital costs were subject to the economic stabilization program, generally ranged somewhat higher than 1 percent. Several factors contributing to this sizable differential can be identified, including (1) growth in third-party reimbursement of hospitals—through Medicare, Medicaid, and comprehensive private plans—which is likely to have weakened hospital resistance to wage demands; (2) increased proportions of highly trained and more highly paid personnel; (3) an increased degree of labor organization and activity; and (4) the fact that hospital employees historically have earned less than similarly skilled workers in other industries. Over the short term, the differential level assumed is generally consistent with experience over the last 10 years (excluding years subject to economic stabilization program controls), but slightly lower due to the relatively high rates of increase projected for average wages in the entire economy. Eventually the level of this differential would be expected to diminish further; and hence, the projection assumes only a modest continuation of the wage level intensity factor over the long run.

The number of hospital employees has continued to increase more rapidly than the number of admissions over the past 20 years. In-

creases in employee intensity averaged 2 percent per year during the 10 years preceding Medicare. The early years of the program were marked by a substantial surge in employees per admission, followed by a period of only modest increases during the imposition of economic stabilization program controls. Many of the same factors which have impacted on hospital wage level differentials can be identified also as contributing factors to the increase in employee intensity; in addition, the increased number and complexity of services provided within a given admission have been significant factors. The projection assumes, in general, a continuation of the pre-Medicare trend, dampened slightly to reflect a lower rate of industry growth than during the earlier period.

Nonlabor unit input intensity is a composite of several heterogeneous components. These include (1) price increases for goods and services that hospitals purchase which do not parallel increases in the CPI, (2) increases in the volume of medical and other supplies purchased and used per admission, and (3) increases in medical equipment and other capital assets employed in the provision of a hospital admission. Due to a lack of data, the nonlabor intensity factor cannot be separated into its component parts and must be treated as a residual. Historically, this factor has increased at a high rate and in an erratic fashion. Increases during the 1956-65 period averaged nearly 5½ percent; these were followed by an irregular series of increases during the period 1966-72 ranging between 5 and 18½ percent. The second and third years of the controlled period 1972-74 produced increases of only 2 to 3 percent, substantially below even the increases for the 10-year pre-Medicare period. The projection assumes a gradual tapering of the nonlabor intensity factor over the 25-year valuation period, from a level consistent with experience during recent years (excluding years subject to economic stabilization program controls) to a level consistent with experience during the decade preceding Medicare.

Aggregate inpatient hospital costs—reflecting the composite of economic factors, volume of service, and unit input intensity—have exhibited a very rapid rate and irregular pattern of increases. Although the pre-Medicare period produced an average rate of increase of approximately 10½ percent, typical rates in subsequent years have tended to vary between 12 and 19 percent.

Changes in the program's share of aggregate hospital costs result from (1) changes in the proportion of the population covered, including changes due to legislation; (2) changes in the relative number and value of services received by beneficiaries; and (3) the effect of administrative actions defining the services eligible for reimbursement and affecting the level of program payments. Historical and projected changes in the hospital insurance program's share of aggregate inpatient hospital costs appear in table A1, with changes in the proportion of the population covered netted from the other sources. As indicated in the table, the share of hospital costs allocated to beneficiaries has fluctuated somewhat in recent years.

The increases experienced in the proportion of the population covered reflect the more rapid rate of increase in the number of persons aged 65 and over than in the total population of the United States and, beginning in mid-1973, the coverage of certain disabled beneficiaries and persons with end stage renal disease. Increases in the proportion

of the population covered are projected to continue, reflecting a continuation of the demographic shift into categories of the population which are eligible for hospital insurance protection.

Other sources which contribute to changes in the program's share of hospital costs include changes in the relative number and value of services received by beneficiaries and the effect of administrative actions defining covered services and affecting payment levels. Data are not available which would enable a quantitative separation between the two components for historical years. The projection assumes, over the long range, changes in these "other sources" only due to the effects of demographic shifts on the number of services received by beneficiaries as a proportion of the total number of hospital services provided for the entire population. Increases in the average age of beneficiaries and of persons not covered lead to higher expected levels of usage of hospital services by both groups, the net effect of which is reflected as changes in "other sources".

c. Skilled nursing facility and home health agency costs

Historical experience with the number of days of care covered in skilled nursing facilities under the hospital insurance program has been characterized by wide swings. The number of covered days dropped very sharply in 1970 and continued to decline through 1972. This was the result of strict enforcement of regulations separating skilled nursing from custodial care. Because of the small fraction of nursing home care covered under the program, this reduction primarily reflected the determination that Medicare was not liable for payment rather than reduced usage of services. The 1972 amendments extended benefits to persons who require skilled rehabilitative services regardless of their need for skilled nursing services (the former prerequisite for benefits). This change and subsequent related changes in regulations have resulted in significant increases in the number of services covered by the program. Some continuation of this pattern is assumed for the next 5 years, with only modest increases projected thereafter.

Increases in the average cost per day in skilled nursing facilities under the program are caused principally by increasing payroll costs for nurses and other skilled labor required. Projected rates of increase are assumed to be only slightly higher than increases in general wages throughout the 25-year projection period. The resulting increases in the cost of skilled nursing facility services are shown in table A2.

Program experience with home health agency costs has shown a generally upward trend. The number of visits has fluctuated somewhat from year to year, with very sharp increases appearing in the last 3 years. Relatively large increases are assumed for the next few years, followed by a projected pattern of increases similar to that for skilled nursing facilities. Cost per service is assumed to increase at a rate only slightly higher than increases in general wages. The resulting home health agency cost increases are shown in table A2.

d. Administrative expenses

The costs of administering the hospital insurance program have remained relatively small, in comparison with benefit amounts, throughout the history of the program. The ratio of administrative expenses to benefit payments has generally fallen within the range of 2 to 3 percent. The short-range projection of administrative costs is

based on estimates of workloads and approved budgets for intermediaries and the Health Care Financing Administration. In the long range, administrative cost increases are based on assumed increases in workloads, primarily due to growth and aging of the population, and on assumed unit cost increases of 2 percent less than the increases in average wages shown in table A1.

2. FINANCING

In order to analyze costs and to evaluate the financing of a program supported by payroll taxes, program costs must be compared on a year-by-year basis with the taxable payroll which provides the source of income for these costs. Since the vast majority of total program costs relates to insured beneficiaries and since general revenue appropriations and premium payments are available to support the uninsured segments, the remainder of this report will focus on the financing for insured beneficiaries.

a. Taxable payroll

Taxable payroll increases can be separated into a part due to increases in covered wages and a part due to increases in the number of covered workers. The taxable payroll projection used in this report is based on assumptions used in projecting experience under the OASDI program. Increases in taxable payroll assumed for this report are shown in table A2.

b. Relationship between program costs and taxable payroll

The single most meaningful measure of program cost increases, with reference to the financing of the system, is the relationship between program cost increases and taxable payroll increases. If the rates of increase in both series are the same, a level tax rate over time will be adequate to support the program. However, to the extent that program costs increase more rapidly than taxable payroll, a schedule of increasing tax rates will be required to finance the system over time. Table A2 shows the resulting increases in program costs relative to taxable payroll over the 25-year projection period. These relative increases fluctuate somewhat during the 1978-80 period, due to the ad hoc increases in the maximum earnings subject to taxes. After 1980, the relative increases reduce gradually to an ultimate level of approximately 3 percent per year.

The result of these increases over the duration of the projection period is a continued increase in the year-by-year ratios of program expenditures to taxable payroll, as shown in table A3.

3. SENSITIVITY TESTING OF COSTS UNDER ALTERNATIVE ASSUMPTIONS

Over the past 20 years, aggregate inpatient hospital costs for all patients have increased substantially faster than increases in average wages and prices in the general economy. As indicated in table A1, the 10-year period preceding Medicare was characterized by an average 10.4 percent increase in hospital costs, nearly 7½ percent higher than the increase attributable to general wage and price increases. The 1966-71 period experienced substantially higher increases in total hospital costs, averaging 16 percent per year. Of this increase, general economic factors accounted for only 5½ percent; the remaining 10½

percent reflected increases in the volume of services provided and in unit input intensity. Even during the 1972-74 period of economic stabilization program controls, hospital costs increased at an average rate of about 12½ percent, over 5½ percent higher than the amount attributable to increases in average wages and in the CPI. Experience for the fully decontrolled years 1975-76 shows an average annual increase in hospital costs of nearly 17 percent, of which about 9 percent is in excess of increases in general economic factors. Preliminary indications for 1977 show hospital cost increases remaining about 8½ percent higher than wages and prices in the general economy.

The sustained, high rates of hospital cost increases in the past raise serious questions concerning future cost increases which might be anticipated. Under conventional economic wisdom, the hospital industry would not be expected to sustain indefinitely the same rate of growth, relative to the general economy, experienced during the last 20 years. However, the growth pattern has persisted for a long period of time and shows no indication of halting. The most reasonable pattern of cost increase assumptions for the future, then, would fall between the two extremes of (1) an indefinite continuation of the past levels of excess of hospital cost increases over general economic factors and (2) a decline in the near term to hospital cost increase levels approaching those for the economy as a whole.

In view of the uncertainty of future cost trends, projected costs for the hospital insurance program have been prepared under three alternative sets of assumptions. A summary of the assumptions and results is shown in table A3. The set of assumptions labeled "Alternative II" forms the basis for the detailed discussion of hospital cost trends and resulting program costs presented throughout this report. It represents an intermediate set of cost increase assumptions, compared with the lower cost and more optimistic alternative I and the higher cost and less optimistic alternative III. Increases in the economic factors (average wages and CPI) for the three alternatives are consistent with those underlying the OASDI report.

As noted earlier, the single most meaningful measure of hospital insurance program cost increases, reference to the financing of the system, is the relationship between program cost increases and taxable payroll increases. The extent to which program costs increases exceed increases in taxable payroll will determine how steeply tax rates must increase to finance the system over time.

Under alternative II, program costs are projected ultimately to increase approximately 3 percent faster than increases in taxable payroll. Program expenditures, which are currently about 2 percent of taxable payroll, increase to a level in excess of 5 percent by the year 2000 under alternative II assumptions. Hence, if all of the projection assumptions are realized over time, hospital insurance tax rates by the end of the 25-year period will have to be substantially higher than those provided in the present financing schedule (2.9 percent of taxable payroll, for 1986 and later).

Alternatives I and III contain assumptions which result in program costs increasing, relative to taxable payroll increases, approximately 2 percent less and 2 percent more rapidly, respectively, than the results under alternative II. Under alternative I, program costs ultimately increase 1 percent more rapidly than increases in taxable

payroll. By the year 2000, program expenditures under this alternative would be slightly greater than 3½ percent of taxable payroll. Hence, hospital insurance tax rates required by the end of the valuation period would be greater than those currently scheduled, even under the optimistic alternative I assumptions. Under alternative III, program costs ultimately increase nearly 5 percent more rapidly than increases in taxable payroll. The result of this differential is a level of program expenditures in the year 2000 which is slightly over 7 percent of taxable payroll, more than 4 percent higher than the 2.9 percent tax rate currently scheduled.

TABLE A1.—COMPONENTS OF HISTORICAL AND PROJECTED INCREASES IN HOSPITAL COSTS¹

[In percent]

| Calendar year | Economic factors | | | Volume of services ² | | Unit input intensity ² | | | | Aggregate inpatient hospital costs ⁴ | HI share | | HI inpatient hospital cost |
|-------------------------|------------------|------|-------------------------------|---------------------------------|---------------------|-----------------------------------|--------------------|--------------------|-------------------------------|---|--------------------------|---------------|----------------------------|
| | Average wages | CPI | Weighted average ³ | Total population | Admission incidence | Wage level | Employee intensity | Nonlabor intensity | Weighted average ³ | | Proportion of population | Other sources | |
| Historical data: | | | | | | | | | | | | | |
| 1956-65 | 3.7 | 1.6 | 3.0 | 1.6 | 1.7 | 1.0 | 2.0 | 5.3 | 4.1 | 10.4 | | | |
| 1966 | 5.5 | 3.0 | 4.6 | 1.1 | 0.5 | -4.6 | 8.2 | 8.4 | 5.5 | 11.7 | | | |
| 1967 | 5.7 | 2.8 | 4.7 | 1.1 | -0.7 | 3.4 | 6.2 | 18.4 | 13.5 | 18.6 | | | |
| 1968 | 6.4 | 4.2 | 5.7 | 1.0 | 0.1 | 3.3 | 4.4 | 11.6 | 9.7 | 16.5 | 0.6 | 7.5 | 24.6 |
| 1969 | 6.6 | 5.4 | 6.6 | 1.0 | 2.6 | 2.6 | 3.5 | 9.9 | 8.2 | 18.4 | 0.5 | -3.7 | 15.2 |
| 1970 | 5.4 | 5.9 | 6.0 | 1.1 | 2.4 | 4.5 | 1.3 | 8.3 | 7.3 | 16.8 | 0.5 | -5.3 | 12.0 |
| 1971 | 6.6 | 4.3 | 5.9 | 1.0 | 2.0 | 3.5 | -0.1 | 6.1 | 4.8 | 13.7 | 0.6 | -0.8 | 13.5 |
| 1972 | 7.0 | 3.3 | 5.6 | 0.9 | 1.2 | 1.1 | 0.2 | 11.3 | 5.8 | 13.5 | 0.7 | -3.3 | 10.9 |
| 1973 | 6.5 | 6.2 | 6.6 | 0.7 | 2.4 | -1.8 | 0.0 | 3.1 | 0.4 | 10.1 | 5.3 | 1.0 | 16.4 |
| 1974 | 6.6 | 11.0 | 9.0 | 0.7 | 3.0 | -0.8 | 2.3 | 2.0 | 1.8 | 14.5 | 6.0 | 3.1 | 23.6 |
| 1975 | 6.3 | 9.1 | 8.0 | 0.7 | 1.0 | 4.2 | 2.5 | 10.5 | 9.0 | 18.7 | 2.2 | 1.6 | 22.5 |
| 1976 | 8.1 | 5.8 | 7.3 | 0.7 | 0.9 | 0.0 | 1.5 | 10.6 | 6.2 | 15.1 | 1.9 | 1.9 | 18.9 |
| Projection: | | | | | | | | | | | | | |
| 1977 | 7.7 | 6.5 | 7.5 | 0.8 | 2.0 | 0.7 | 1.5 | 8.6 | 5.7 | 16.0 | 1.8 | -2.8 | 15.0 |
| 1978 | 7.2 | 6.1 | 7.0 | 0.8 | 2.0 | 1.0 | 1.5 | 8.5 | 5.9 | 15.7 | 1.7 | -0.1 | 17.3 |
| 1979 | 7.9 | 6.1 | 7.4 | 0.8 | 1.6 | 1.0 | 1.5 | 8.5 | 5.9 | 15.7 | 1.6 | -0.3 | 17.0 |
| 1980 | 7.9 | 5.7 | 7.1 | 0.8 | 1.4 | 1.0 | 1.5 | 8.5 | 6.0 | 15.3 | 1.5 | -0.2 | 16.6 |
| 1985 | 6.0 | 4.0 | 5.1 | 0.8 | 0.9 | 1.0 | 1.5 | 7.0 | 5.2 | 12.0 | 1.6 | -0.2 | 13.4 |
| 1990 | 6.0 | 4.0 | 5.0 | 0.8 | 0.7 | 0.5 | 1.0 | 6.0 | 4.3 | 10.8 | 1.0 | -0.2 | 11.6 |
| 1995 | 5.9 | 4.0 | 4.9 | 0.7 | 0.5 | 0.5 | 1.0 | 5.5 | 4.1 | 10.2 | 0.7 | -0.1 | 10.8 |
| 2000 | 5.8 | 4.0 | 4.8 | 0.6 | 0.2 | 0.5 | 1.0 | 5.0 | 3.8 | 9.4 | 0.4 | 0.0 | 9.8 |

¹ Percent increase in year indicated over previous year.

² Based on data from the American Hospital Association through 1976.

³ Weighted average of the individual components, with adjustments for the effects of compounding. The weightings are based on the proportions of aggregate inpatient hospital costs which are for pay-

roll and for nonpayroll expenses. The adjustments for the effects of compounding are necessary to compensate for the fact that the various components actually are multiplicative, rather than additive as illustrated in this table.

⁴ Includes hospital costs for all patients.

TABLE A2.—RELATIONSHIP BETWEEN INCREASES IN TOTAL HI PROGRAM COSTS AND INCREASES IN TAXABLE PAYROLL¹

[In percent]

| Calendar year | HI benefit costs | | | | HI administrative costs ³ | Total HI program costs ² | HI taxable payroll | Ratio of costs to payroll ⁴ |
|---------------|---------------------------------|---------------------------------------|---------------------------------|------------------|--------------------------------------|-------------------------------------|--------------------|--|
| | Inpatient hospital ² | Skilled nursing facility ³ | Home health agency ³ | Weighted average | | | | |
| 1978..... | 18.2 | 15.8 | 30.5 | 18.4 | 9.6 | 18.2 | 11.0 | 6.5 |
| 1979..... | 17.6 | 16.0 | 26.0 | 17.7 | 10.3 | 17.6 | 16.3 | 1.1 |
| 1980..... | 17.1 | 15.1 | 19.4 | 17.1 | 9.9 | 17.0 | 11.9 | 4.6 |
| 1985..... | 13.6 | 10.2 | 10.8 | 13.5 | 7.8 | 13.4 | 7.2 | 5.8 |
| 1990..... | 11.7 | 8.9 | 8.9 | 11.6 | 7.2 | 11.5 | 6.5 | 4.7 |
| 1995..... | 10.8 | 8.4 | 8.4 | 10.7 | 6.7 | 10.7 | 6.4 | 4.0 |
| 2000..... | 9.8 | 7.9 | 7.9 | 9.8 | 6.0 | 9.7 | 6.5 | 3.0 |

¹ Percent increase in year indicated over previous year.² This column differs slightly from the last column of table A1, since table A1 includes all persons eligible for HI protection while this table excludes noninsured persons.³ Costs attributable to insured beneficiaries only. Benefits and administrative costs for noninsured persons are financed through general revenue transfers and premium payments rather than through payroll taxes.⁴ Percent increases in the ratio of program expenditures to taxable payroll. This is equivalent to the differential between the increase in program costs and the increase in taxable payroll.

Note: Taxable payroll is adjusted to take into account the lower contribution rates on self-employment income, on tips, and on multiple-employer "excess wages" as compared with the combined employer-employee rate.

TABLE A3.—SUMMARY OF ALTERNATIVE COST PROJECTIONS FOR THE HOSPITAL INSURANCE PROGRAM

[In percent]

| Calendar year | Increases in aggregate inpatient hospital costs ¹ | | | | Changes in the relationship between costs and payroll ² | | | Expenditures as a percent of taxable payroll |
|-------------------------|--|-----|----------------------|-------|--|-----------------|---------------------------|--|
| | Average wages | CPI | Volume and intensity | Total | Program costs ³ | Taxable payroll | Ratio of costs to payroll | |
| Alternative I: | | | | | | | | |
| 1978..... | 7.2 | 6.1 | 8.7 | 15.7 | 18.2 | 11.0 | 6.5 | 2.06 |
| 1979..... | 8.4 | 6.0 | 7.3 | 14.8 | 17.2 | 16.8 | 0.4 | 2.07 |
| 1980..... | 8.1 | 5.5 | 6.8 | 13.8 | 16.1 | 12.2 | 3.5 | 2.14 |
| 1985..... | 5.5 | 3.0 | 5.4 | 9.6 | 11.3 | 6.6 | 4.4 | 2.62 |
| 1990..... | 5.5 | 3.0 | 3.9 | 8.0 | 9.1 | 6.1 | 2.9 | 3.10 |
| 1995..... | 5.4 | 3.0 | 3.4 | 7.4 | 8.0 | 5.8 | 2.1 | 3.49 |
| 2000..... | 5.2 | 3.0 | 3.1 | 7.0 | 7.2 | 6.1 | 1.0 | 3.69 |
| Alternative II: | | | | | | | | |
| 1978..... | 7.2 | 6.1 | 8.7 | 15.7 | 18.2 | 11.0 | 6.5 | 2.06 |
| 1979..... | 7.9 | 6.1 | 8.3 | 15.7 | 17.6 | 16.3 | 1.1 | 2.09 |
| 1980..... | 7.9 | 5.7 | 8.2 | 15.3 | 17.0 | 11.9 | 4.6 | 2.18 |
| 1985..... | 6.0 | 4.0 | 6.9 | 12.0 | 13.4 | 7.2 | 5.8 | 2.86 |
| 1990..... | 6.0 | 4.0 | 5.8 | 10.8 | 11.5 | 6.5 | 4.7 | 3.65 |
| 1995..... | 5.9 | 4.0 | 5.3 | 10.2 | 10.7 | 6.4 | 4.0 | 4.47 |
| 2000..... | 5.8 | 4.0 | 4.6 | 9.4 | 9.7 | 6.5 | 3.0 | 5.20 |
| Alternative III: | | | | | | | | |
| 1978..... | 7.2 | 6.1 | 8.7 | 15.7 | 18.2 | 11.0 | 6.5 | 2.06 |
| 1979..... | 8.2 | 6.8 | 8.4 | 16.3 | 18.1 | 16.4 | 1.4 | 2.10 |
| 1980..... | 7.4 | 7.1 | 8.2 | 15.9 | 17.6 | 9.4 | 7.5 | 2.26 |
| 1985..... | 6.5 | 5.0 | 8.4 | 14.3 | 15.3 | 8.6 | 6.1 | 3.04 |
| 1990..... | 6.5 | 5.0 | 7.7 | 13.5 | 13.8 | 7.1 | 6.3 | 4.22 |
| 1995..... | 6.4 | 5.0 | 7.5 | 13.3 | 13.1 | 7.0 | 5.7 | 5.58 |
| 2000..... | 6.2 | 5.0 | 6.9 | 12.5 | 12.0 | 6.9 | 4.8 | 7.08 |

¹ Percent increase in the year indicated over the previous year. Includes hospital costs for all patients.² Percent increase in the year indicated over the previous year.³ Includes cost attributable to insured beneficiaries only.

Note: Taxable payroll is adjusted to take into account the lower contribution rates on self-employment income, on tips, and on multiple-employer "excess wages" as compared with the combined employer-employee rate.

APPENDIX B.—DETERMINATION AND ANNOUNCEMENT OF THE INPATIENT HOSPITAL DEDUCTIBLE FOR 1978¹

Pursuant to authority contained in section 1813(b)(2) of the Social Security Act (42 U.S.C. 1395e(b)(2)), as amended, I hereby determine and announce that the dollar amount which shall be applicable for the inpatient hospital deductible, for purposes of section 1813(a) of the Act, as amended, shall be \$144 in the case of any spell of illness beginning during calendar year 1978. Changes in the amount of the inpatient hospital deductible also affect certain other cost-sharing provisions under the hospital insurance program. Thus, for spells of illness beginning in 1978, the daily coinsurance for the 61st through the 90th days of hospitalization (one-fourth the inpatient hospital deductible) will be \$36; the daily coinsurance for the lifetime reserve days (one-half of the inpatient hospital deductible) will be \$72; and the daily coinsurance for the 21st through the 100th days of extended care services (one-eighth of the inpatient hospital deductible) will be \$18. A statement of the actuarial bases employed in arriving at the amount of \$144 for the inpatient hospital deductible for 1978 follows.

The law provides that for spells of illness beginning in calendar years after 1968 the inpatient hospital deductible shall be equal to \$40 multiplied by the ratio of (1) the current average per diem rate for inpatient hospital services for the calendar year preceding the year in which the promulgation is made (in this case, 1976) to (2) the current average per diem rate for such services for 1966. The law also provides that such current average per diem rates shall be determined by the Secretary of Health, Education, and Welfare from the best available information as to the amounts paid under the program for inpatient hospital services furnished during the year, by hospitals who are qualified to participate in the program and for whom there is an agreement to do so, for individuals who are entitled to benefits as a result of insured status under the Old-Age, Survivors, and Disability Insurance program or the Railroad Retirement program. In addition, the law provides that if the amount so determined is not an even multiple of \$4, it shall be rounded to the nearest multiple of \$4.

The data used to make the necessary computations of the current average per diem rates for calendar years 1966 and 1976 are derived from individual inpatient hospital bills that are recorded for all beneficiaries in the records of the program. These records show for each bill the number of inpatient days of care, the interim reimbursement amount, and the interim cost (the sum of interim reimbursement, deductible, and coinsurance). Tabulations are prepared which sum-

¹ This statement was published in the Federal Register for Sept. 29, 1977 (Vol. 42, No. 189, p. 54669).

marize the data from these bills by the year in which the care was provided. The resulting average interim per diem rates accurately reflect interim costs on an accrual basis.

In order to properly reflect the change in the average per diem hospital cost under the program, the average interim cost (as shown in the tabulations) must be adjusted for the effect of final cost settlements made with each provider of services after the end of its accounting year to adjust the reimbursement to that provider from the amount paid during that year on an interim basis to the actual cost of providing covered services to beneficiaries. To the extent that the ratio of final cost to interim cost is different in the current year than it was in 1966, the increase in average interim per diem costs will not coincide with the increase in actual cost that has occurred. The best data available indicate that this adjustment, however, does not change the computation of the deductible for 1978 by enough to result in an amount different from the \$144 stated.

The current average per diem rate for inpatient hospital services for calendar year 1976, based on tabulated interim costs, is \$136.63; the corresponding amount for 1966 is \$37.92. These averages are based on approximately 90 million days of hospitalization in 1976 and 30 million days in 1966 (last 6 months of the year). The ratio of the 1976 rate to the 1966 rate is 3.603; when this ratio is multiplied by \$40, an amount of \$144.12 is produced, which must be rounded to \$144. Accordingly, the inpatient hospital deductible for spells of illness beginning during calendar year 1978 is \$144.

I am bound by the law to promulgate these increases. I do not like them. I am anxious for enactment of the cost containment legislation that will put a break on the spiraling costs of hospital care. This is the only way to reduce annual increases in the amount of money Medicare patients must pay.

Dated: September 26, 1977.

JOSEPH A. CALIFANO, Jr.,
Secretary.

APPENDIX C.—DETERMINATION AND ANNOUNCEMENT
OF THE HOSPITAL INSURANCE MONTHLY PREMIUM
RATE FOR THE UNINSURED AGED, FOR THE 12-MONTH
PERIOD BEGINNING JULY 1, 1978¹

Pursuant to authority contained in section 1818(d)(2) of the Social Security Act (42 U.S.C. 1395i-2(d)(2)), I hereby determine and promulgate that the hospital insurance premium, applicable for the 12-month period commencing July 1, 1978, is \$63.

Section 1818 of the Social Security Act, added by section 202 of the Social Security Amendments of 1972 (Pub. L. 92-603), provides for voluntary enrollment in the hospital insurance program (Part A of Medicare) by certain uninsured persons 65 and older who are otherwise ineligible. Section 1818(d)(2) of the Act requires the Secretary to determine and promulgate, during the final quarter of 1977, the dollar amount which will be the monthly Part A premium for voluntary enrollment for months occurring in the 12-month period beginning July 1, 1978. As required by statute, this amount must be \$33 times the ratio of (1) the 1978 inpatient hospital deductible to (2) the 1973 inpatient hospital deductible, rounded to the nearest multiple of \$1 or, if midway between multiples of \$1, to the next higher multiple of \$1.

The purpose of the premium formula is to adjust the original \$33 premium for changes in the cost of providing hospital care. The ratio of the inpatient hospital deductibles does this approximately, since the deductible as calculated under section 1813(b)(2) is based on the average daily cost of providing hospital care under the hospital insurance program. However, the deductible is calculated (by law) from data reflecting program experience in an earlier year. The increase in the 1978 deductible, and thus the increase in the premium now being promulgated for the period July 1978-June 1979, results from the increase in hospital per diem costs in calendar year 1976 over 1975. In addition, the premium calculation fails to adjust for changes in the hospital utilization rate and for changes in non-hospital costs under the program. For these reasons, the premium can only be a rough approximation to actual per capita program costs.

Under section 1813(b)(2) of the Act, the 1978 inpatient hospital deductible was determined to be \$144. The 1973 deductible was actuarially determined to be \$76, although the 1973 deductible was actually promulgated to be only \$72 to comply with a ruling of the Cost of Living Council. The premium for the 12-month period ending June 30, 1979 has been calculated using the \$76 deductible for 1973, since this appears to satisfy most closely the intent of the law. Thus, the hospital insurance premium is $\$33 \times (144/76) = \62.53 , which is rounded to \$63.

Dated: December 23, 1977.

JOSEPH A. CALIFANO, Jr.,
Secretary.

¹ This statement was published in the Federal Register for Dec. 30, 1977 (Vol. 42, No. 251, p. 65275).

